

AMMUNITION CAN LOCK ADAPTER

REFERENCES TO RELATED APPLICATIONS

The present application claims priority of the provisional application having serial
5 no. 60/427,368 filed on November 19, 2002 entitled 'AMMO CAN', LOCK ADAPTER.

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates generally to the field of security locking systems and, more
10 particularly, to a padlock receiver system adapted for new manufacture or retrofit to
ammunition cans employing the preexisting aperture and latching mechanism of the can
to allow securing the ammunition can with a lock to prevent access to stored ammunition.

Description of the Related Art

Ammunition cans are readily available as surplus items or from various
15 manufacturers. Typically, the can is of a standard design having a rectangular case with a
hinged lid and a clamp lever engaging the lid opposite the hinge. Such ammunition cans
usually do not have a locking mechanism to prevent entry into the can. Various locking
mechanisms have been employed to lock ammunition cans including a standard hinged
hasp arrangement which can be mounted with one element on the clamp lever and the
20 mating hasp on the side of the can below the seated position of the clamp lever. This
requires drilling of multiple holes for mounting of the elements on the clamp and side and
often does not create a secure closure when locked.

Certification under 37 C.F.R. §1.10

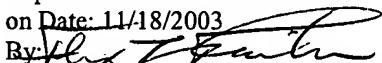
This correspondence is being filed by Express mail addressed to

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Alexandria, VA 22313-1450

Express Mail No.: ER494858431

on Date: 11/18/2003

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Alternatively, bar clamp arrangements such as that marketed by Amherst Drop Zone, Inc. Hadley, MA attempt to lock the clamp lever with a bar attached in a cantilevered fashion from one end. Such devices may permit excessive play in the “locked” clamp lever allowing the clamp lever to be forced open without disengaging the
5 lock.

It is therefore desirable to provide a locking mechanism which is easily retrofitted to existing ammunition cans without requiring excessive modification or drilling of mating holes on the can.

It is further desirable that the installed locking mechanism be secure to avoid
10 disengagement of the locking mechanism.

SUMMARY OF THE INVENTION

The present invention provides a lock adapter for an ammunition can having a
15 clamp lever with an aperture. The adapter includes a rod element received through the aperture and mounted to a side of the can. The rod element incorporates a relieved portion on an end opposite the side of the can and has a length and diameter sized in combination with the relieved portion for clearance of the aperture through an angular displacement of the clamp lever for opening the can. The rod element further has a hole substantially perpendicular to an axis of the rod and spaced from a butting surface on the
20 rod engaging the side of the can for clearance of the clamp lever, the hole of predetermined size to receive a padlock. A bolt received through a drilled hole in the side of the can engages a tapped bore in the rod. A Bellville washer is placed on the bolt between the side of the can and the head of the bolt. The Bellville washer includes a
25 sealing gasket adjacent the side of the can to seal the bolt and bolt hole preventing moisture from entering the can.

An embodiment which demonstrates the characteristics of the invention is set forth in the following detailed description. The embodiment, both as to its construction

and its method of operation, together with additional advantages thereof, will be best understood from the following description when read and understood in connection with the accompanying drawings.

5 BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial perspective view of a standard ammunition can with a lock adapter employing the present invention installed;

10 FIG. 2 is a side sectional view of the elements of the invention and partial section of the ammunition can;

FIG. 3a is an exploded top view of the rod element, washer and bolt of FIG. 2;

FIG. 3b shows an alternative embodiment of the rod element with a chamfered end;

15 FIG. 3c shows a second alternative embodiment of the rod element with a filleted end; and,

FIG. 4 is a partial side sectional view of the ammunition can with the drill guide in place.

DETAILED DESCRIPTION OF THE INVENTION

20 Referring to the drawings, FIG. 1 shows a standard ammunition can 10 on which the present invention is mounted. The lid of the can 12 has a hinge (not shown) on one edge and a lip 16, best seen in FIG. 2, on a side opposite the hinge. A clamp lever 18 has a hinge 20 mounted to a side 22 of the can. A bale 24 which extends from the clamp lever at pivot points 26 and is received over the lip on the lid. The resilience of a seal 28 on the can lid and the over-center action of the bale urge clamp lever against the side of the can in the closed position.

On standard ammunition cans, the clamp lever has an aperture 30 which is typically merely a lightening hole, nominally 1/2 inch in diameter. The present invention

employs a rod element 32 mounted to the side of the can and received through the aperture when the clamp lever is in the closed position. The rod element in the embodiment shown is substantially cylindrical with a diametrically relieved portion 34 at an end of the rod element distal from a butt surface 36 engaging the side of the can. For 5 the embodiment shown the relieved portion is spherical but in alternative embodiments is chamfered or filleted as shown in FIGs. 3b and 3c. While the embodiments show a cylindrical rod element, a square or polygonal element is employed in alternative embodiments. The length and diameter of the rod element and the relief are sized to allow the rod element to be received through the aperture during the angular displacement of 10 the clamp lever about its hinge. For the embodiment shown, the rod element is brass and employs a diameter of 7/16 inch with an overall length of 15/16 inch.

A hole 38 extends perpendicular to the axis 40 of the rod element to receive a padlock 42. For the embodiment shown, the hole is placed 11/16 inch from the butt surface engaging the side of the can and is a 3/16 inch hole with a deburred edge.

15 The rod element is mounted to the can side using a bolt 44 extending through a drilled hole 46 with a Bellville washer 48 having a sealing gasket 50 to secure the bolt and prevent moisture penetration in to the ammunition can. The Bellville washer is mounted either on the inside, as shown in the drawings, or outside of the can.

The adapter employing the present invention requires only one hole has to be 20 drilled in the can side. Drilling of the hole is enabled using a drill guide or template ferule 52 as shown in FIG. 4. The template ferule has an outer diameter substantially equal to the diameter of aperture 30 in the clamp lever and an axial hole 54 sized to receive a 1/4 inch drill bit 56. The template ferule is placed in the aperture and a drill bit is inserted through the axial hole to match drilled bolt hole 46 in the side of the ammunition 25 can. The match drilled hole provides proper placement of the rod element for clearance from the aperture during operation of the clamp lever. For the embodiment shown, the bolt hole is concentric with the aperture. In alternative embodiments, the bolt hole is offset upward from the center of the aperture to provide greater clearance for the lower

arc of the aperture from the rod element during rotation of the clamp lever. The bolt is inserted through the Bellville washer and the hole from inside the can and the rod element engages the bolt in a bore 56 which is tapped for the thread of the bolt. For the embodiment of the invention shown in the drawings, a 1/4-20 NC2 bolt and taped thread
5 are employed.

Having now described the invention in detail as required by the patent statutes, those skilled in the art will recognize modifications and substitutions to the specific embodiments disclosed herein. Such modifications are within the scope and intent of the present invention as defined in the following claims.